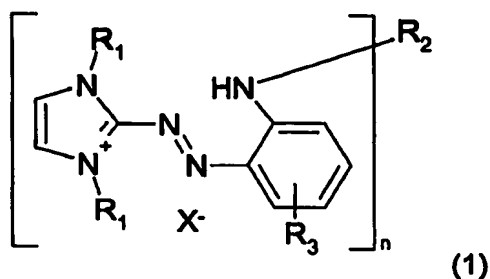


Claims:**1. Cationic dye of formula (1)**

wherein

R_1 is an unsubstituted or substituted C_1 - C_{14} alkyl or an aryl radical;

X^- is an anion;

R_3 is an unsubstituted or substituted C_1 - C_{14} alkyl, aryl radical, C_1 - C_6 alkoxy, cyanid, nitro or halide;

n is 1 or 2; and

if n is 1, then R_2 is hydrogen, unsubstituted or substituted C_1 - C_{14} alkyl; or

if n is 2, then R_2 is an unsubstituted or substituted C_1 - C_{14} alkylen.

2. Cationic dye according to claim 1, wherein

R_1 is methyl.

3. Cationic dye according to any of claims 1 or 2, wherein

R_1 is methyl,

n is 2, and

R_2 is a substituted or unsubstituted C_1 - C_8 alkylen.

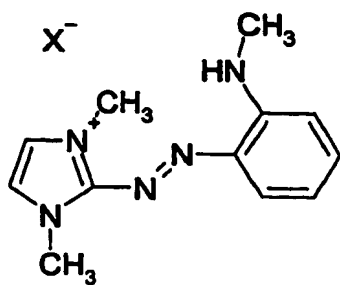
4. Cationic dye according to any of claims 1 to 3, wherein wherein

R_1 is methyl,

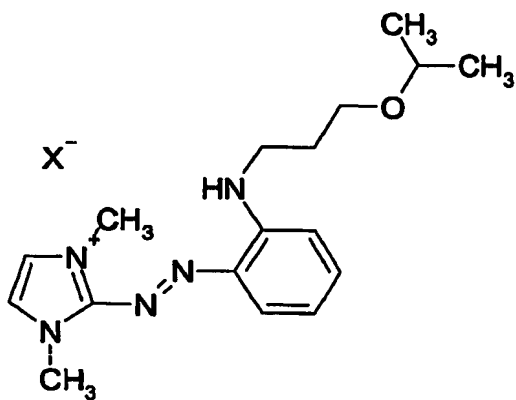
n is 1, and

R_2 is a substituted or unsubstituted C_1 - C_{12} alkyl.

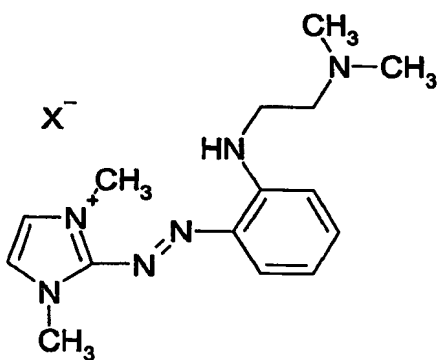
5. Cationic dye according to any of claims 1 to 4, of formulae (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16) or (17)



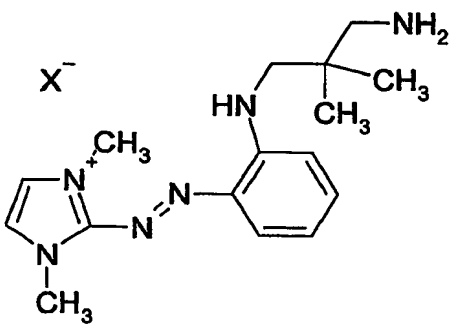
(3)



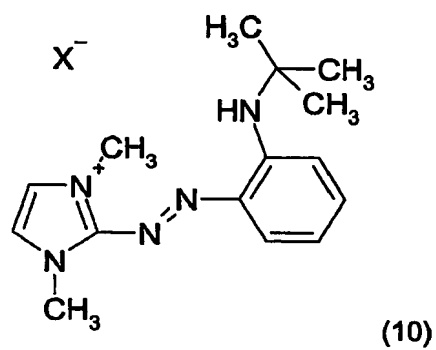
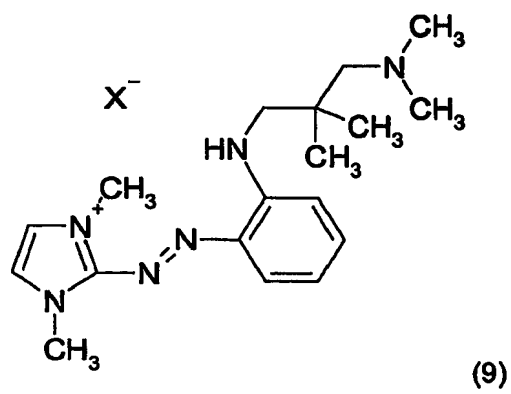
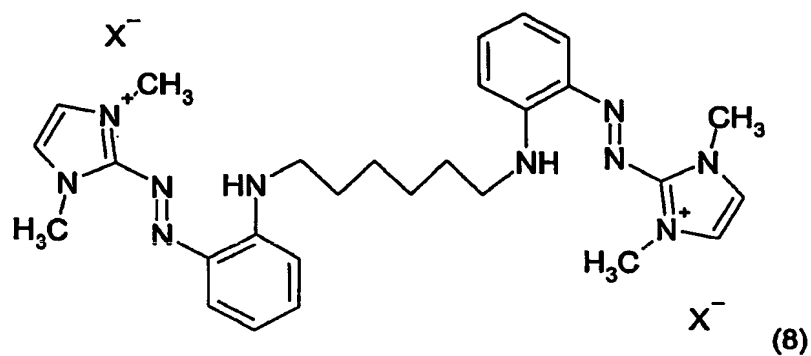
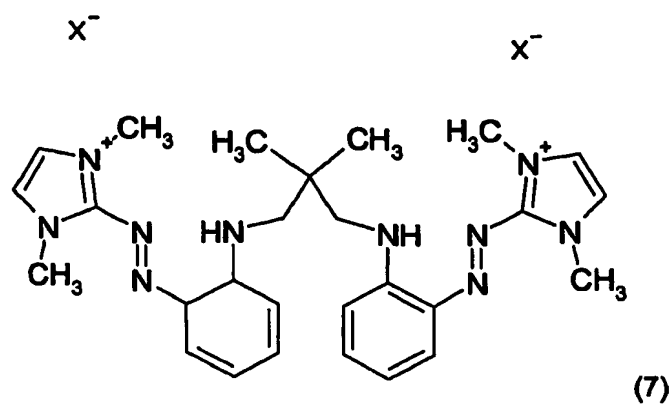
(4)

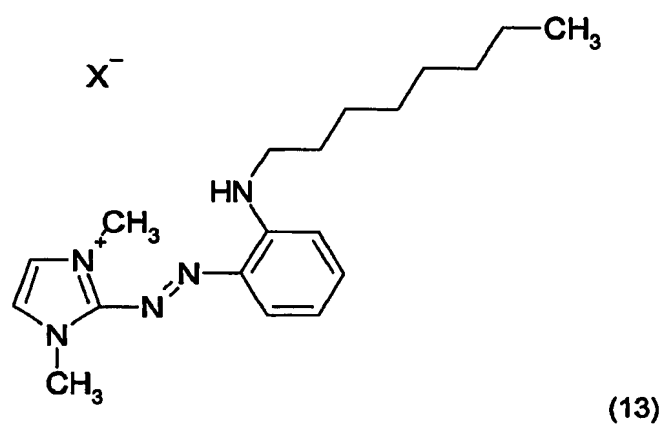
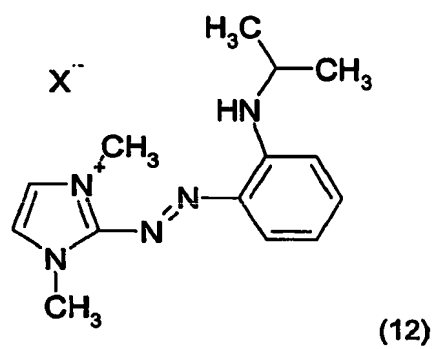
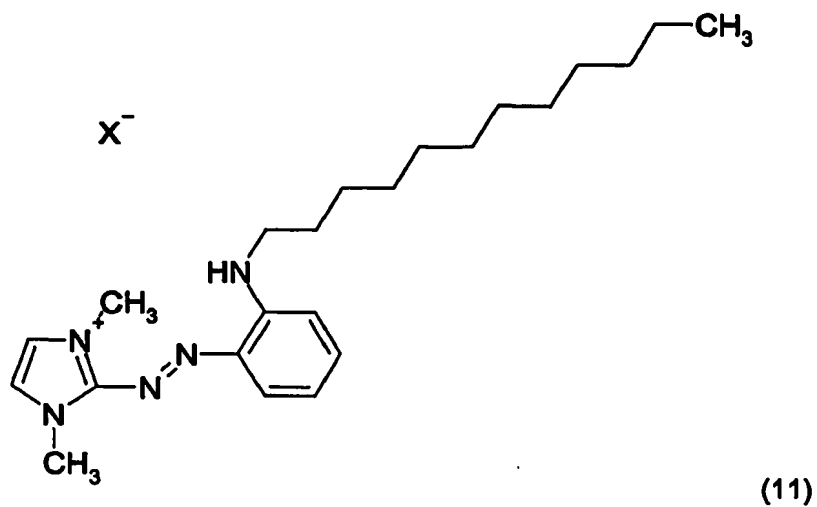


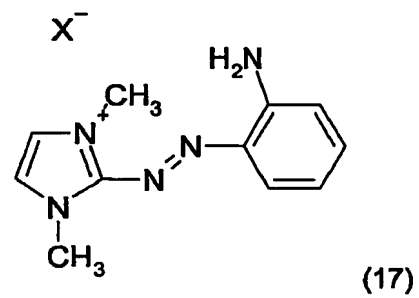
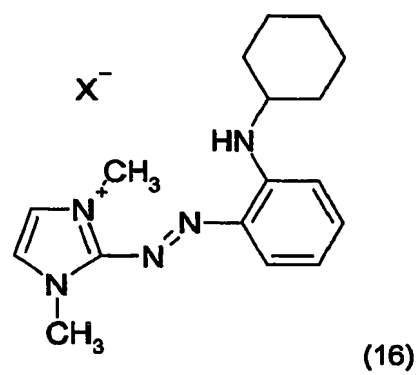
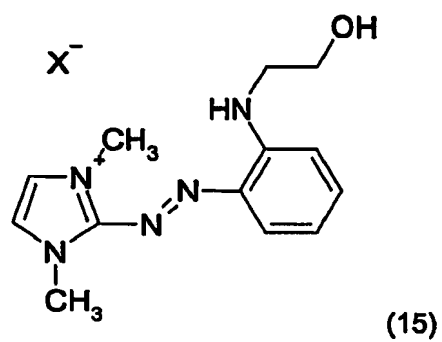
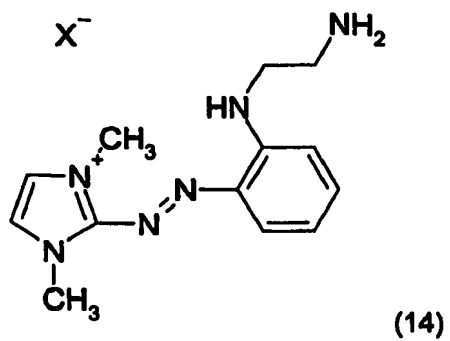
(5)



(6)



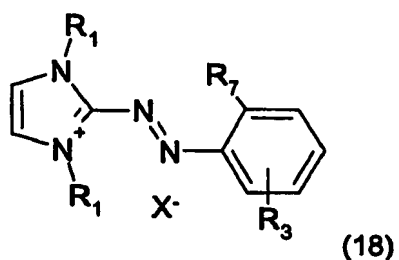




wherein

X⁻ is an anion.

6. Cationic dye of formula (18)



wherein

R₇ is C₁-C₆alkoxy or halide, and

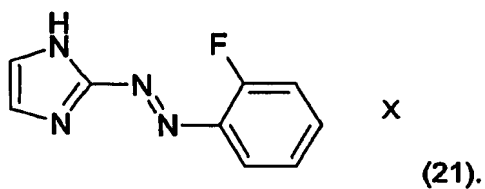
X⁻ is an anion,

R₃ is an unsubstituted or substituted C₁-C₁₄alkyl, aryl radical, C₁-C₆alkoxy, cyanid, nitro or halide, and

R₁ is an unsubstituted or substituted C₁-C₁₄alkyl or an aryl radical;

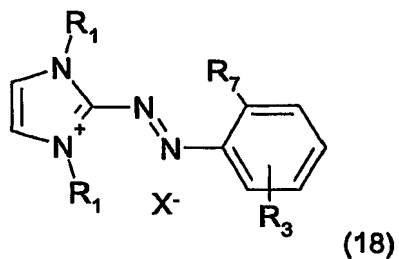
or

a compound of formula (21)



7. A process for the preparation of cationic dyes of formula (1) as defined above in claim 1, comprising

bringing a compound of formula (18)



wherein

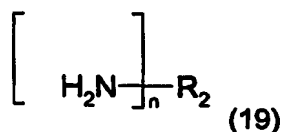
R₇ is C₁-C₆alkoxy or halide,

R_1 is an unsubstituted or substituted C_1 - C_{14} alkyl or an aryl radical;

X^- is an anion;

R_3 is an unsubstituted or substituted C_1 - C_{14} alkyl, aryl radical, C_1 - C_6 alkoxy, cyanid, nitro or halide;

with an amine of formula (19)



wherein

n is 1 or 2; and

if n is 1, then R_2 is hydrogen, unsubstituted or substituted C_1 - C_{14} alkyl; or

if n is 2, then R_2 is an unsubstituted or substituted C_1 - C_{14} alkylen;

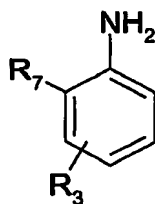
into contact.

8. A process for the preparation of compound of formula (21) as defined above in claim 6, comprising

- a) diazotizing 2-fluoroanilin and
- b) then coupling with imidazole.

9. A process for the preparation of cationic dyes of formula (18) as defined above in claim 6, comprising

- a) diazotiation of an amine of formula



wherein

R_7 is C_1 - C_6 alkoxy or halide,

R_1 is an unsubstituted or substituted C_1 - C_{14} alkyl or an aryl radical;

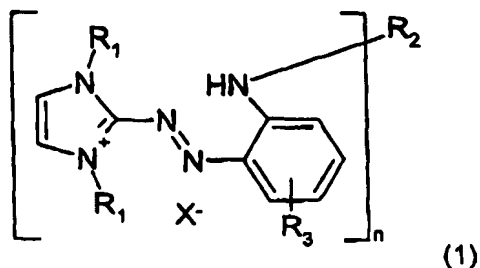
R_3 is an unsubstituted or substituted C_1 - C_{14} alkyl, aryl radical, C_1 - C_6 alkoxy, cyanid, nitro or halide; and

- b) coupling the diazotiated compound with imidazole, and
- c) then alkylation or arylation.

10. A process according to claim 7, wherein compound of formula (18) is prepared by a process according to claim 9.
11. A composition comprising at least a single dye of formula (1) as defined above in claim 1 or a compound as defined in claim 6, or prepared in accordance with a process according to claims 7 to 10.
12. A composition according to claim 11 comprising in addition at least a single further direct dye and/or an oxidative agent.
13. A composition according to claim 11 comprising in addition at least a single oxidative dye and/or; at least a single oxidative dye and an oxidative agent.
14. A composition according to any one of claims 11 to 13, in form of a shampoo, conditioner, gel or emulsion.
15. A method of dyeing organic material, especially human hair, that comprises bringing into contact with the organic material at least a single a dye of formula (1) according to claims 1 to 5, or a compound as defined in claim 6, or a composition according to claims 10 to 13, or a dye as prepared according to claims 7 to 10, and, optionally, a further dye.
16. A method according to claim 15 for dyeing or tinting human hair.
17. A method for dyeing human hair or strands according to claims 15 or 16, that comprises contacting the hair with at least a single a dye of formula (1) as defined in claim 1, or a compound as defined in claim 6, and an oxidative agent and, optionally, a further direct dye.
18. A method for dyeing human hair according to any of claims 16 to 17, that comprises contacting the hair with at least a single a cationic dye of formula (1) as defined in claim 1, or a compound as defined in claim 6, and at least a single oxidative dye; or contacting the hair with a cationic dye of formula (1) as defined in claim 1, or a compound as defined in claim 6, and at least a single oxidative dye and an oxidative agent.

AMENDED CLAIMS

[received by the International Bureau on 20 January 2005 (20.01.2005);
original claims 1, 6, 7 and 9 amended; remaining claims unchanged (3 pages)]

Claims:**1. Cationic dye of formula (1)**

wherein

R_1 is an unsubstituted or substituted C_1 - C_{14} alkyl or an aryl radical;

X^- is an anion;

R_3 is hydrogen, an unsubstituted or substituted C_1 - C_{14} alkyl, aryl radical, C_1 - C_8 alkoxy, cyanid, nitro or halide;

n is 1 or 2; and

if n is 1, then R_2 is hydrogen, unsubstituted or substituted C_1 - C_{14} alkyl; or

if n is 2, then R_2 is an unsubstituted or substituted C_1 - C_{14} alkylen.

2. Cationic dye according to claim 1, wherein

R_1 is methyl.

3. Cationic dye according to any of claims 1 or 2, wherein

R_1 is methyl,

n is 2, and

R_2 is a substituted or unsubstituted C_1 - C_8 alkylen.

4. Cationic dye according to any of claims 1 to 3, wherein wherein

R_1 is methyl,

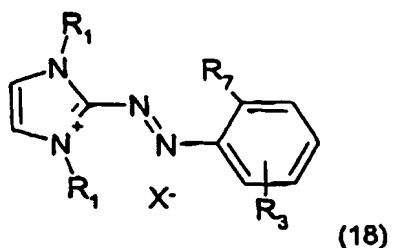
n is 1, and

R_2 is a substituted or unsubstituted C_1 - C_{12} alkyl.

5. Cationic dye according to any of claims 1 to 4, of formulae (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16) or (17)

X⁻ is an anion.

6. Cationic dye of formula (18)



wherein

R₂ is C₁-C₆alkoxy or halide, and

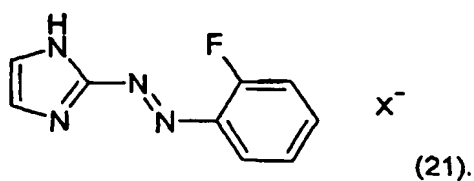
X⁻ is an anion,

R₃ is hydrogen, an unsubstituted or substituted C₁-C₁₄alkyl, aryl radical, C₁-C₆alkoxy, cyanid, nitro or halide, and

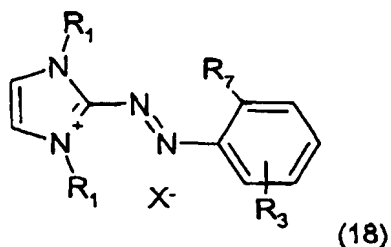
R₁ is an unsubstituted or substituted C₁-C₁₄alkyl or an aryl radical;

or

a compound of formula (21)



7. A process for the preparation of cationic dyes of formula (1) as defined above in claim 1, comprising
bringing a compound of formula (18)



wherein

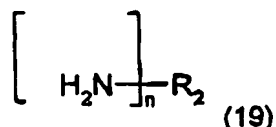
R₂ is C₁-C₆alkoxy or halide,

R_1 is an unsubstituted or substituted C_1 - C_{14} alkyl or an aryl radical;

X^- is an anion;

R_3 is hydrogen, an unsubstituted or substituted C_1 - C_{14} alkyl, aryl radical, C_1 - C_6 alkoxy, cyanid, nitro or halide;

with an amine of formula (19)



wherein

n is 1 or 2; and

if n is 1, then R_2 is hydrogen, unsubstituted or substituted C_1 - C_{14} alkyl; or

if n is 2, then R_2 is an unsubstituted or substituted C_1 - C_{14} alkylene;

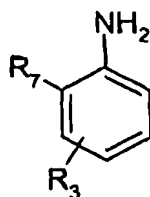
into contact.

8. A process for the preparation of compound of formula (21) as defined above in claim 6, comprising

- a) diazotizing 2-fluoroanilin and
- b) then coupling with imidazole.

9. A process for the preparation of cationic dyes of formula (18) as defined above in claim 6, comprising

- a) diazotiation of an amine of formula



wherein

R_7 is C_1 - C_6 alkoxy or halide,

R_1 is an unsubstituted or substituted C_1 - C_{14} alkyl or an aryl radical;

R_3 is hydrogen, an unsubstituted or substituted C_1 - C_{14} alkyl, aryl radical, C_1 - C_6 alkoxy, cyanid, nitro or halide; and

- b) coupling the diazotiated compound with imidazole, and
- c) then alkylation or arylation.